Office-Supreme Court, U.S.
FILED
AUG 31 1983
ALEXANDER L. STEVAS,
CLERK

NO. 82-1591

IN THE

Supreme Court of the United States

October Term, 1983

Administrator, Environmental Protection Agency,
Petitioner,

v.

Natural Resources Defense Council, Inc., *et al.*,
Respondents.

On Writ of Certiorari to the U.S. Court of Appeals
for the District of Columbia Circuit

MOTION FOR LEAVE TO FILE BRIEF *AMICUS CURIAE* AND BRIEF *AMICUS CURIAE* OF THE AMERICAN GAS ASSOCIATION

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MOTION FOR LEAVE TO FILE BRIEF *AMICUS CURIAE*

Pursuant to Rule 36 of the Supreme Court Revised Rules, the American Gas Association (A.G.A.) hereby respectfully requests permission to file its brief *amicus curiae* in support of the Petitioner, the Administrator of the Environmental Protection Agency (EPA), in the above-captioned case. A.G.A.'s motion is required because consent to the filing of the brief *amicus curiae* has been withheld by a single party, Chevron USA Inc. (which is also the petitioner in No. 82-1005).

A.G.A. is a national trade representative for approximately 300 member companies active in either the local distribution or pipeline transmission of natural gas. Serving approximately 160 million consumers, member companies provide 85 percent of the nation's natural gas utility sales.

This case involves the interpretation of language included in the 1977 Amendments of the Clean Air Act which can have an impact on the fuel consumption decisions of certain industrial plants. Approximately 53 percent of the sales of natural gas by A.G.A. member companies are made to industrial users,

including electric utilities which use the gas in the generation of electricity. Consequently, this case is of immediate and substantial interest to our member companies.

Under Part D of the Clean Air Act as amended, states which had not, by 1977, met national air quality standards established by the EPA were directed, among other things, to require permits for the construction of "new or modified major stationary sources" of air pollution in "non-attainment areas". In October, 1981, the EPA adopted a regulation for Part D which permitted states for purposes of reviewing "new or modified major stationary sources" to utilize a "plantwide" definition of "stationary sources" that treats an industrial plant as a single source. Such a definition is an example of the application of a "bubble" concept. As demonstrated below, the bubble concept can also be applied to existing source situations with the same beneficial results as result from use of the plantwide definition for new source review. The EPA's regulation allows involved industrial concerns to burn concurrently natural gas and less environmentally benign fuels in order to derive the maximum benefits of the clean-burning characteristics of natural gas (i.e. the "select use" of natural gas). The application of the select use concept to existing sources may be extremely simple, involving no more than the switching, for example, for low sulphur to high sulphur oil in one unit, while offsetting this conversion with a change from low sulphur oil to gas in the nearby unit. Thirty-one states or jurisdictions have to date utilized the plantwide source definition and have sought to modify their state implementation plans required under the Act to incorporate that approach.

A.G.A. submits that EPA correctly concluded that states should have discretion to define "stationary source" on a plantwide basis providing their state implementation plans meet the basic requirements of the statute. One practical impact of the EPA's decision, an impact not dealt with below by the parties, is to afford the nation the variety of benefits flowing from the "select use" of natural gas, benefits entirely consistent with the basic purposes of the 1977 Amendments to the Clean Air Act clearly articulated by Congress. A.G.A.'s purpose in submitting its brief is to provide concrete examples

of how the "bubble" policy provides a wider array of economic choices with the capability of environmental, economic, and national security gains, consistent with Congressional intent.

WHEREFORE, the American Gas Association respectfully moves that this Court grant permission to file its brief *amicus curiae*, attached hereto, in support of the positions of the Petitioner.

Respectfully submitted,

JOHN A. MYLER
Attorney for the
American Gas Association

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BRIEF *AMICUS CURIAE* OF THE AMERICAN GAS ASSOCIATION

I. Interest of the *Amicus Curiae*

The American Gas Association (A.G.A.) is a national trade association representing approximately 300 member companies active in the local distribution or pipeline transmission of natural gas. A.G.A.'s member companies provide approximately 85 percent of the nation's natural gas utility sales, approximately one-half of which (53%) are sales to industrial users, including electric utilities which use the gas in generating electricity. A.G.A. member companies have a direct interest in the issues before the Court in this proceeding since the practical effect of the judgement of the U.S. Court of Appeals for the District of Columbia Circuit is to discourage certain uses of natural gas in non-attainment areas – a policy determination unintended by Congress and in direct conflict with the basic purposes of the Clean Air Act, as amended.[1] The approach authorized by the EPA and voided by the Court of Appeals

[1] The Court of Appeals' decision is reported at 685 F.2d 718.

produces cleaner air and also provides additional benefits of cost savings and improved national energy independence.

II. **Argument**

Pursuant to Part D of the Clean Air Act as amended, states which had not, by 1977, met national air quality standards established by the EPA were directed to require permits for the construction of "new or modified major stationary sources" of air pollution in non-attainment areas. In October, 1981, the EPA adopted a regulation for Part D which permitted states for purposes of reviewing "new or modified major stationary sources" to utilize a "plant-wide" definition of "stationary source" that treats an industrial plant as a single source, an example of what is the so-called "bubble" concept.[2] The Court of Appeals has invalidated that regulation, finding the use of the bubble concept inappropriate in programs enacted to improve the quality of ambient air. A.G.A. submits that the application of a "plant-wide" definition to "stationary source" for purposes of new source review under Part D is legally permissible and socially desirable. Use of the bubble concept affords firms the flexibility to meet air quality standards in the most efficient and cost-effective fashion. There is no identifiable inconsistency between the bubble approach and the basic Congressional goal of bringing all national air quality regions into compliance with the requirements of the Clean Air Act pursuant to Part D thereof, 42 U.S.C. § 7501 *et seq.*

Congress stated quite clearly that the 1977 amendment to the Clean Air Act aimed at the so-called non-attainment areas (Part D) has

> "two main purposes: (1) to allow reasonable economic growth in [a non-attainment] area while making reasonable further progress to assure attainment of the standards by a fixed date; and (2) to allow States greater flexibility for the former purposes than EPA's present interpretive regulations afford."

H.R. Rep. No. 95-294 at 211.

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[2]C.F.R. 51.18(j)(1)(ii); 40 C.F.R. 52.24(f)(2).

The bubble concept provides direct support to achieving both Congressional purposes. Indeed, the EPA relied, in the process of establishing the bubble approach, on indications that to define "stationary source" otherwise tended to frustrate legislative intent.

EPA noted expressed concerns that its prior definition of "source" as both an industrial plant and the individual pieces of process equipment within the plant provided disincentives to new investment and modernization by discouraging modifications to existing facilities and could retard enhanced air pollution control by discouraging replacement of dirtier equipment with cleaner. 46 Fed. Reg. 16280, 16281 (March 12, 1981); 46 Fed. Reg. at 50768.

The discussion below provides concrete examples of how the bubble policy provides a wider array of economic choices and the potential for environmental, economic, and national security gains, consistent with legislative intent.

A. Superior Environmental Characteristics of Natural Gas Combustion

Natural gas is the cleanest burning fossil fuel. It emits virtually no sulfur dioxide (a component of "acid rain") or particulate matter when combusted. Emissions of carbon dioxide, carbon monoxide, nitrogen oxide and non-methane hydrocarbons are all significantly less with natural gas combustion than with the combustion of other fuel sources (e.g., coal or oil).[3] As an example, a large electric utility or industrial boiler operating on natural gas emits only .0006 pounds of sulfur dioxide (SO_2) per million Btus (MMBtu) of fuel consumed.[3] In contrast, typical grades of fuel oil and coal burned under similarly sized boilers would release 1.6 and 3.4 pounds of SO_2 per MMBtu, respectively.[4]

Employing the bubble concept with natural gas permits the fuel mix at a plant to be altered to meet varying sulfur

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[3]*Compilation of Air Pollutant Emission Factors*, Pub. No. AP-42, U.S. Environmental Protection Agency at 1.4-2 (3rd Ed., August, 1977).

[4]*Id.* at 1.1-3 (coal), at 1.3-2 (oil). Fuel oil would thus emit 2667 times the amount of SO_2 as natural gas, coal 5667 times.

dioxide emission limits. The tables attached as Appendices 1 and 2 show how this concept operates. For example, a plant-wide emission limit of 1.4 pounds of sulfur dioxide per MMBtu could be achieved by operating the plant on a mix of 33 percent gas and 67 percent fuel oil (2 percent sulfur content) (See Appendix 2). Tighter standards could be met by burning a mix with a higher quality oil, or by increasing the proportion of gas consumed.

B. Potential Benefits of Select Use "Bubbling" – A Hypothetical Industrial Plant Example

A simple illustration of the select use approach is provided by the recently approved "multiple-source" bubble for the Narragansett Electric Company in Rhode Island which was operating two generating stations less than one mile apart, both on 1 percent sulfur oil. The EPA approved a plan allowing one of the units to operate on 2.2 percent sulfur oil, while the other unit burns gas. As a result, anticipated savings were $2-4 million per year, SO_2 emissions will be reduced by 1,388 tons per year, and oil imports will be reduced by 600,000 barrels per year.

Such a plan is exceedingly simple, yet provides substantial benefits, as illustrated by the hypothetical example set out in Appendix 3. Consider an industrial facility with two large boilers, each with a capacity of 250 MMBtu/hr operating on low sulfur (0.5 percent) oil at a cost of $35.36/bbl. (June, 1983 N.Y. harbor price of $30.75/bbl, increased by a factor of 15 percent to account for delivery to the New York/New Jersey area.) An SO_2 emission limit of 0.52 lbs/MMBtu is not uncommon in the Middle Atlantic region. Assuming a capacity utilization factor of 65 percent, the annual fuel cost for these two boilers would be approximately $16.2 million. The annual maintenance expense for the two boilers, based on a charge of 30 cents/MMBtu, would be $850,000. Total annual fuel consumption would be 460,000 barrels of oil (2,848 Trillion Btu), and the SO_2 emission rate would be 0.52 lbs/MMBtu.

The same emission rate, 0.52 lbs/MMBtu, could be achieved by operating on slightly higher sulphur oil (one percent) in one of the units and gas in the second unit. This allows significant

reductions in both fuel and maintenance expenses, *even if the price of gas increases to the price of low sulfur oil* ($5.70/MMBtu, equivalent to oil priced at $35.36/bbl). Economic savings can still be realized, even under this pessimistic gas pricing assumption, since the substitution of gas in the second unit allows lower quality oil to be burned in the first unit – 1 percent sulfur at $29.44/bbl delivered (June, 1983 N.Y. harbor price of $25.60/bbl increased by 15 percent).

As a result of this select use bubbling approach, the annual plant fuel bill is reduced by over $1 million, from $16.2 million to $14.9 million. Again, the cost of fueling the second boiler (with gas) is not assumed to change; the reduction stems entirely from a switch to lower quality oil in the first unit. Boiler maintenance cost is also reduced in the select use case. A reduction of roughly $85,000 results from a charge of 24 cents/MMBtu for gas boiler maintenance versus the 30 cents/MMBtu for oil boiler maintenance. Although the overall energy consumption in each case is the same, 2,848 Trillion Btu, the substitution of domestic gas for oil – much of which is imported – results in an oil savings of 230,000 barrels per year. There is no technological impediment to this select use bubbling option, and the results in terms of environmental impact, reduced fuel costs, maintenance costs and oil consumption are substantial.

C. Potential Benefits of Select Use "Bubbling" – A Hypothetical Powerplant Example

In addition to select use bubbling as a means to reduce fuel and operating costs and oil imports, while maintaining or improving air quality ambiance, by switching from oil-only operations (with emissions monitored on a boiler-by-boiler basis) to a gas/oil fuel mix with emissions monitored on a plant-wide basis, similar results exist for a switch from coal-only to gas/coal. In addition, gas/coal "bubbling" may preclude the need for coal-fired facilities to purchase and operate expensive pollution control equipment.

In 1981 the American Gas Association examined three operating scenarios for 12 New England electric powerplants which are under consideration by the Department of Energy

for conversion from oil to coal. The purpose of the analysis was to compare two conversion options for the 12 plants versus their continued dependence on oil for a generating fuel in all units:

1) Continued dependence on *oil* in their *non-coal-capable* units, and conversion from *oil to coal* in coal-capable units with the addition of adequate pollution control equipment to meet state environmental standards; and,
2) Conversion from *oil to coal* in coal-capable units and some combination of *oil and gas* in non-coal-capable units which would satisfy relevant emission limitations without the addition of SO_2 scrubbers.

For comparison purposes, all cost and energy consumption data were based on *plant totals* rather than on coal-capable boilers alone. For example, in the scrubbed coal scenario, the 20 coal-capable boilers would operate exclusively on coal. However, the analysis also included the energy consumption and costs associated with those boiler units which would not convert (roughly 50 percent of the total generating capacity at the 12 powerplants). For purposes of this analysis, the prices of oil and gas to powerplants were assumed to be equal. A summary of the updated analysis results is provided in Appendix 4 and summarized below.

1) Conversion of all 12 coal-capable New England powerplants to coal with select gas use would be $225 million per year (15 percent) less costly than continuing to operate these plants exclusively on oil. The annualized cost of select gas use, including the capital costs of coal conversion, and operation and maintenance and fuel expenses over 15 years, would be 4.2 cents/kwh as compared with 5.0 cents/kwh for the fuel and operation and maintenance costs associated with a continued dependence on oil (1982 dollars).
   - The total annual cost of converting and operating all 12 plants on coal with select use of gas would average an estimated $1,325 million versus an

average of $1,550 million required annually for continued oil operation (annualized life-cycle cost basis).

2) At the same time, coal conversion of these 12 plants with select gas use would save 100,000 barrels of oil per day, roughly 15 percent of New England's total oil consumption. This oil savings, some 36 million barrels per year (worth $1.2 billion at current prices), would require 67 billion cubic feet of natural gas per year, about one-third of one percent of current annual domestic gas consumption.

3) By comparison, converting to coal with the use of scrubbers would cost New England electric consumers approximately 10 percent more than converting with select use of gas (4.6 cents/kwh versus 4.2 cents/kwh).

   - Initial capital costs for converting coal-capable units at the 12 plants for select gas use operation would total an estimated $955 million, roughly 50 percent less than the scrubbed coal capital cost of $1,815 million or an annual average cost of $125 million versus $240 million.
   - Average annual operation and maintenance expenses associated with the select gas case would be an estimated $55 million per year, approximately one half the $115 million for the scrubbed coal case.

4) Oil offset by the scrubbed coal case would be 69,000 barrels per day, 31 percent less than the volume potentially offset by the select use gas case.

D. Additional Benefits

In addition to the fuel cost, oil import and maintenance savings offered by select use bubbling in the industrial and powerplant examples presented above, as well as the elimination of large capital expenditures in the powerplant example which would be required absent select use bubbling, this strategy may also offer additional benefits. For example, the multiple oil supply disruptions of the 1970's, coupled with coal miner

strikes and freezing coal piles, indicate that the fuel diversity which select use bubbling presents is indeed worthwhile.

Finally, select use bubbling enhances the opportunity for plants in some areas to burn higher sulfur local coal rather than importing lower sulfur coal from distant sources. This option can be exercised while meeting applicable state implementation plan emission limits; thus, movement toward the attainment of national ambiant air quality standards need not be hindered.

III. Summary of Argument

The utilization of natural gas with less clean energy sources in a bubble mode (referred to as the "select use" of gas) offers a variety of benefits, to the fuel consumer and to the nation. From a national perspective, select use can: maintain or improve air quality; reduce our dependence on imported oil; and increase reliance on domestic coal (and gas). For the energy consumer, select use can: reduce overall fuel costs; reduce susceptibility to fuel supply disruptions, such as a coal or rail strike or an oil embargo; and preclude the need to purchase expensive pollution control equipment.

The EPA regulations at issue in this case were the product of a reasoned decisionmaking process which provided the opportunity for compliance with important legislative goals in a manner offering the benefits described above, benefits consistent with the controlling statutory language and legislative history. As such, they reflect an exercise of agency discretion clearly supportable by precedent of this Court.[5]

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[5] *Train* v. *Natural Resources Defense Council, Inc.*, 421 U.S. 60, 87.

IV. Conclusion

The judgement of the Court of Appeals should be reversed.

Respectfully submitted,

JOHN A. MYLER
Attorney for the
American Gas Association

APPENDIX 1[1]

PERCENTAGE OF FUEL MIX REQUIRED TO BE GAS FOR VARIOUS GRADES OF COAL AND SO_2 EMISSION LEVELS

SO_2 SIP (lb./MMBtu)	Sulfur Content of Eastern Coal[2]				Sulfur Content of Western Coal[3]			
	.8%	1%	2%	3%	.8%	1%	2%	3%
0.6	53%	62%	81%	87%	61%	68%	84%	89%
0.8	37	49	75	83	47	58	79	86
1.0	22	37	68	79	34	47	74	82
1.2	6	24	62	75	21	37	68	79
1.4	–	11	56	71	8	26	63	75
1.6	–	–	50	66	–	16	58	72
1.8	–	–	43	62	–	5	53	68
2.0	–	–	37	58	–	–	47	65
2.2	–	–	31	54	–	–	42	61
2.4	–	–	24	49	–	–	37	58
2.6	–	–	18	45	–	–	32	54
2.8	–	–	12	41	–	–	26	51
3.0	–	–	5	37	–	–	21	47

[1] *Select Gas Use for Environmental Purposes*, American Gas Association 20 (January, 1983).

[2] 12,000 Btu/lb.

[3] 10,000 Btu/lb.

APPENDIX 2[1]

PERCENTAGE OF FUEL MIX REQUIRED TO BE GAS FOR[1] VARIOUS GRADES OF RESIDUAL OIL AND SO_2 EMISSION LEVELS

SO_2 SIP (lb./MMBtu	Sulfur Content of Oil				
	.25%	.5%	1%	2%	3%
0.2	23%	62%	81%	90%	94%
0.4	–	23	62	81	87
0.6	–	–	43	71	81
0.8	–	–	24	62	75
1.0	–	–	5	52	68
1.2	–	–	–	43	62
1.4	–	–	–	33	56
1.6	–	–	–	24	49
1.8	–	–	–	14	43
2.0	–	–	–	5	37
2.2	–	–	–	–	30
2.4	–	–	–	–	24
2.6	–	–	–	–	17
2.8	–	–	–	–	11
3.0	–	–	–	–	5

[1] *Select Gas Use For Environmental Purposes*, American Gas Association 21 (January, 1983).

SUMMARY ECONOMIC COMPARISON OF OIL ONLY AND SELECT GAS USE WITH OIL IN TWO LARGE INDUSTRIAL BOILERS

	Oil Only			Select Gas Use with Oil		
	Unit #1	Unit #2	Total	Unit #1	Unit #2	Total
Annual Operating Expense ($000)						
Fuel	$8,100	$8,100	$16,200	$6,800	$8,100	$14,900
Operating & Maintenance	425	425	850	425	340	765
Total	$8,525	$8,525	$17,050	$7,250	$8,440	$15,665
Annual Fuel Consumption (Billion Btu)						
Oil	1,424	1,424	2,848	1,424	0	1,424
Gas	0	0	0	0	1,424	1,424
Total	1,424	1,424	2,848	1,424	1,424	2,848
Annual Oil Savings (000 Bbl)	0	0	0	0	230	230

ECONOMIC COMPARISON OF OIL, SCRUBBED COAL, AND SELECT GAS USE WITH COAL IN 12 NEW ENGLAND POWERPLANTS

	Oil (Base Case)	Coal With Scrubber	Coal With Select Gas Use
Capital Cost ($1982, Millions)			
– Oil to Coal Conversion[1]	–	$790	$790
– SO_2 Scrubber[2]	–	$875	–
– Electrostatic Precipitator[2]	–	$150	$150
– Gas Hook-Up[3]	–	–	$12
Total Capital Cost	–	$1,815	$955
Total Annualized Capital Cost ($1982, Millions)[6]	–	$240	$125
Annualized Operation & Maintenance Cost ($1982, Millions)[4,6]			
– Oil	$50	$25	$15
– Coal			
Scrubber Related	–	$55	–
Non-Scrubber Related	–	$35	$35
Total Coal	–	$90	$35
– Gas	–	–	$5

ECONOMIC COMPARISON OF OIL, SCRUBBED COAL, AND SELECT GAS USE WITH COAL IN 12 NEW ENGLAND POWERPLANTS (Cont'd.)

	Oil (Base Case)	Coal With Scrubber	Coal With Select Gas Use
Total Annualized Operation & Maintenance	$50	$115	$55
Annualized Fuel Cost ($1982, Millions)[5,6]			
– Oil	$1,500	$760	$430
– Coal	–	$330	$385
– Gas	–	–	$330
Total Annualized Fuel Cost	$1,500	$1,090	$1,145
Total Annualized Capital, O&M, and Fuel Cost[6]	$1,500	$1,445	$1,325
Production cost per Kwh (¢1982/Kwh)	5.0¢	4.6¢	4.2¢
Difference per Kwh vs. Oil	–	-0.4¢	-0.8¢
Energy Consumption (Trillion Btu/yr)[8]			
– Oil	306	155	88
– Coal	–	151	151
– Gas	–	–	67
Total	306	306	306
Oil Saved (Thousands of Bbls/day)	–	69	100

ECONOMIC COMPARISON OF OIL, SCRUBBED COAL, AND SELECT GAS USE WITH COAL IN 12 NEW ENGLAND POWERPLANTS (Cont'd.) (Footnotes)

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[1] *Profiles for Title I Existing Electric Powerplants*, (Washington, D.C.; Economic Regulatory Administration, Office of Fuels Conversion, April 1980). Conversion costs based on estimates of $115/Kw for "low-cost" conversions; $340/Kw for "high-cost" conversions.

[2] *Particulate and Sulfur Dioxide Emission Control Costs for Large Coal-Fired Boilers*, (Cincinnati; PEDCo Environmental Inc. for the Environmental Protection Agency, EPA-450/3-78-007, February 1978), pp. 3-12, 4-16. Assumes 3.5% sulfur coal used in limestone scrubber equipped units. Scrubber costs range from $140 to $314/Kw, depending on unit capacity, and varying emission limits. Assumes 3.5% sulfur, 14% ash coal used in scrubbed coal case with electrostatic precipitator. In the select gas use case, 0.8% sulfur coal, 14% ash content assumed. Precipitator costs in both cases range from $26/Kw to $59/Kw, depending on unit capacity.

[3] *Fuel Distribution*, (Argonne; Institute of Gas Technology for Argonne National laboratory, ANL/CESITE 79-8, July 1979), p. 35. Costs reflect distance to nearest gas transmission line, rather than nearest distribution line. It is likely that the distance to gas distribution lines is less than the distance to transmission lines, and thus the gas hook-up cost is probably somewhat overstated. No hook-up cost was added to the West Springfield plant, which currently burns some gas.

[4] Annual O&M expense of 2 mills/Kwh assumed for unscrubbed coal units and 5 mills/Kwh for scrubbed units. See: *A Preliminary Economic Analysis of Reconversion of Coal Capable Utility Boilers* (Washington; ICF for Edison Electric Institute, April 1980), Attachment B. O&M costs for oil and gas units assumed to be 67% and 33% respectively, of unscrubbed coal O&M as per: Kaiser Aluminum & Chemical Corp., *Economics of New Coal versus New Gas/Oil Boilers*, (January 1978), Exhibit 4 and Table IV.

ECONOMIC COMPARISON OF OIL, SCRUBBED COAL, AND SELECT GAS USE WITH COAL IN 12 NEW ENGLAND POWERPLANTS (Cont'd.) (Footnotes)

[5] Fuel price projections for coal and oil from the Spring 1982 TERA Base Case of the American Gas Association; price of gas assumed to equal the price of oil. Coal for scrubber equipped units assumed to be 3.5% sulfur coal for select gas use case assumed to be 0.8% sulfur, and 10% more expensive than average utility coal. Price differentials by sulfur content taken from: *Cost and Quality of Fuels for Electric Utility Plants – July 1980*, (Washington; U.S. Energy Information Administration, November 1980), pp. 12-13. Price differentials reflect those reported in Ohio, a significant producer and consumer of both high and low sulfur coals, which is relatively close to the New England market.

[6] Annualized costs reflect 10 percent per year real time value of money, *exclusive of inflation*. Ten percent is an estimate of the real pretax rate of return of U.S. electric utilities based on: 50-50 debt-equity ratio; 12% return on debt (weighted average of yields on newly issued utility bonds, *Moody's Public Utility Manual, 1980*); 27.2 percent return on equity (derived from price earning ratio of 6.8 and 46% tax rate, *Moody's Public Utility Manual, 1980*); and, an inflation rate of 8.8% (implicit GNP deflator as published in the *Survey of Current Business* of the Department of Commerce).

[7] Energy consumption based on 35% boiler efficiency and 55% annual capacity utilization. Energy contents of 6 MMBtu/bbl (oil), 24 MMBtu/ton (coal), and 1 MMBtu/Mcf (gas) were assumed.